

Table S9. *Cis*-effect of the B₁₂ and folate SNVs on the expression of the target gene in white blood cells and adipose tissue.

SNV name	ID	Trait	Alleles (effect/other)	EAF	Trait effect	Gene	Transcript	Blood		Adipose	
								Effect	P	Effect	P
rs1801133	chr1:11778965	Folate	G/A	0.653	0.096	<i>MTHFR</i>	NM_005957	0.027	0.59	-0.039	0.53
rs17421511	chr1:11780375	Folate	G/A	0.829	0.044	<i>MTHFR</i>	NM_005957	0.126	0.035	0.141	0.054
rs12272669	chr1:45747242	B ₁₂	A/G	0.0028	0.363	<i>MMACHC</i>	AL080062	0.358	0.49	-0.101	0.85
rs2270655	chr4:146795868	B ₁₂	G/C	0.946	0.081	<i>MMAA</i>	NM_172250	0.137	0.17	-0.323	0.012
rs1141321 ^a	chr6:49520392	B ₁₂	C/T	0.599	0.065	<i>MUT</i>	NM_000255	-0.736	9.1 × 10 ⁻⁵⁹	-0.483	2.5 × 10 ⁻¹⁶
rs1801222	chr10:17196157	B ₁₂	G/A	0.581	0.112	<i>CUBN</i>	NM_001081	-0.052	0.27	-0.094	0.1
rs56077122	chr10:17247021	B ₁₂	A/C	0.333	0.062	<i>CUBN</i>	NM_001081	0.096	0.057	0.084	0.17
rs34324219	chr11:59379954	B ₁₂	C/A	0.891	0.218	<i>TCN1</i>	NM_001062	0.180	0.021	-0.044	0.63
rs34528912	chr11:59388111	B ₁₂	C/T	0.963	0.153	<i>TCN1</i>	NM_001062	0.263	0.022	-0.376	0.018
rs117456053	chr11:59373407	B ₁₂	G/A	0.976	0.126	<i>TCN1</i>	NM_001062	-0.079	0.57	0.073	0.69
rs652197 ^b	chr11:71527389	Folate	C/T	0.178	0.067	<i>FOLR3</i>	NM_000804	0.997	2.6 × 10 ⁻⁶⁹	0.896	8.0 × 10 ⁻³⁷
rs139130389 (INDEL) ^b	chr11:71527804	Folate	CTA/C	0.101	0.087	<i>FOLR3</i>	NM_000804	1.514	7.1 × 10 ⁻¹¹⁰	1.367	1.8 × 10 ⁻⁶²
rs41281112	chr13:99316635	B ₁₂	C/T	0.946	0.164	<i>CLYBL</i>	NM_138280	0.151	0.14	0.051	0.71
rs3742801	chr14:73828759	B ₁₂	T/C	0.273	0.041	<i>ABCD4</i>	NM_005050	0.069	0.17	-0.058	0.35
rs3742801	chr14:73828759	B ₁₂	T/C	0.273	0.041	<i>ABCD4</i>	NM_020323	0.116	0.018	0.098	0.11
rs778805	chr19:5783209	B ₁₂	A/G	0.237	0.044	<i>FUT6</i>	NM_000150	-0.145	0.0084	-0.097	0.15
rs708686	chr19:5791619	B ₁₂	T/C	0.293	0.055	<i>FUT6</i>	NM_000150	-0.160	0.0037	-0.037	0.58
rs602662	chr19:53898797	B ₁₂	A/G	0.633	0.166	<i>FUT2</i>	NM_000511	0.004	0.93	-0.021	0.73
rs2336573	chr19:8273709	B ₁₂	T/C	0.330	0.318	<i>CD320</i>	NM_016579	-0.756	2.6 × 10 ⁻⁰⁷	0.482	0.024
rs1131603	chr22:29348975	B ₁₂	C/T	0.519	0.195	<i>TCN2</i>	NM_000355	0.310	0.0028	0.406	0.0027
rs5753231 ^c	chr22:29333069	B ₁₂	T/C	0.208	0.047	<i>TCN2</i>	NM_000355	-0.266	6.5 × 10 ⁻⁰⁶	-0.440	7.0 × 10 ⁻¹⁰

Correlation between SNVs that associate with increased B₁₂ or folate and mRNA expression in blood and adipose tissue from 1,001 and 673 individuals, respectively. The correlations are tested by regression analysis adjusted, for age, sex and differential cell counts (blood only), and inverse normal transformed relative expression values on the estimated genotype dosage.

^aNo other SNV shows significantly higher correlation with the expression in adipose or blood of *MUT* than rs1141321.

^bThe INDEL chr11:71527804 is the most significant *cis* variant for *FOLR3*.

^cFor *TCN2* there are *cis*-variants both in blood and adipose tissue that have stronger correlation than rs5753231 with its expression, while having little effect on serum B₁₂ levels.